

Amendments to and listing of the Claims:

Please amend claim 49. This listing of claims will replace all prior versions and listings of claims in the application:

1-42. (Canceled).

43. (Previously presented) An induction heating coil for use in an induction heating apparatus for induction heating an object to be heated made of a material such as copper or aluminum by passing a high-frequency current of 40 to 100 kHz, having a coil portion formed of a coil wire serving as a coil conductive wire and comprising stranded wires, each obtained by bundling and twisting multiple wires whose conductors are covered with a first insulating material, being covered on the outer faces thereof with a second insulating material formed of a fluorocarbon resin having insulation layers having different melting points, the melting point of the fluorocarbon resin for use in the outermost insulation layer of said second insulating material being made lower than the melting point of PFA serving as the fluorocarbon resin for use in the inner insulation layer thereof, said coil wire being wound a predetermined number of turns so as to have a predetermined shape and heated to fuse said outermost insulation layer formed of the fluorocarbon resin and to carry out bonding.

44. (Previously presented) An induction heating coil in accordance with claim 43, wherein wires of 0.1 mm or less in the diameter of said conductor are used for at least part of said stranded wires.

45. (Previously presented) An induction heating coil in accordance with claim 43, comprising terminal portions for external connection secured to the ends of said coil portion while electrical connection to said conductors is maintained by carrying out heat generation using Joule heat generated by current flowing and by pressurizing the ends of said coil portion at the same time to fuse said first insulating material and said second insulating material and to pressure-bond the ends to said conductors.

46. (Previously presented) An induction heating coil in accordance with claim 45, further comprising a coil holding member for holding said coil portion and said terminal portions, said terminal portion having a connection portion for electrically connecting said conductors by simultaneously heating and pressurizing the end of said coil portion, a coil wire holding portion extended to said connection portion and a bending portion extended nonlinearly to said coil wire holding portion, said bending portion having a female thread portion or a hole, and said coil wire at the end of said coil portion being lead out from said connection portion in a direction substantially identical to that of said coil wire holding portion.

47. (Previously presented) An induction heating coil production method comprising:
a step of forming a coil portion by winding a coil wire a predetermined number of turns so as to have a predetermined shape, said coil wire being formed by covering the outer faces of stranded wires, each obtained by bundling and twisting multiple wires whose conductors of 0.1 mm or less in diameter are covered with a first insulating material, with a second insulating material, and

a step of connecting terminals for external connection to the ends of said coil portion while electrical connection to said conductors is maintained by carrying out heat generation using Joule heat generated by current flowing at the connection portions of the terminals for external connection and by pressurizing the ends of said coil portion at said connection portions at the same time to fuse said first insulating material and said second insulating material and to pressure-bond said ends to said conductors, wherein

said second insulating material is a fluorocarbon resin having multiple insulation layers having different melting points, the melting point of the fluorocarbon resin for use in the outermost insulation layer of said second insulating material is made lower than the melting point of PFA serving as the fluorocarbon resin for use in the inner insulation layer thereof, and in said step of forming said coil portion, said outermost insulation layer is fused by heating and the adjacent portions of said coil wire are securely bonded mutually.

48. (Previously presented) An induction heating coil production method in accordance with claim 47, comprising a step of leading out said coil wire at the end of said coil from said connection portion in a direction substantially identical to that of said coil wire holding

portion, said terminal having a connection portion for electrically connecting said conductors by simultaneously heating and pressurizing the end of said coil portion, a coil wire holding portion extended to said connection portion and a bending portion extended nonlinearly to said coil wire holding portion, and said bending portion having a female thread portion or a hole.

49. (Currently amended) An induction heating coil having a coil portion formed of a coil wire serving as a coil conductive wire and comprising wires whose conductors are covered with a first insulating material or stranded wires each obtained by bundling and twisting a multiplicity of said wires, the outer circumferences thereof being provided with a second insulating material partly or wholly, and said coil wire being wound a predetermined number of turns so as to have a predetermined shape, and

said coil portion being configured that said second insulating material has an adhesion function generated by carrying out predetermined heating and is a bonding insulating material, containing wherein said second insulating material is a material selected from the group consisting of woven cloth or nonwoven cloth immersed in a non-cured or half-cured rubber, or thermoplastic resin, woven cloth immersed in a half-cured rubber, woven cloth immersed in a thermoplastic resin, nonwoven cloth immersed in a non-cured rubber, nonwoven cloth immersed in a half-cured rubber, and nonwoven cloth immersed in a thermoplastic resin, and that a portion of said second insulating material is bonded to and another portion of said second insulating material are bonded by heating.

50. (Previously presented) An induction heating coil for use in an induction heating apparatus for induction heating an object to be heated made of a material such as copper or aluminum by passing a high-frequency current of 40 to 100 kHz, having a coil portion formed of a coil wire serving as a coil conductive wire and comprising stranded wires, each obtained by bundling and twisting multiple wires whose conductors are covered with a first insulating material, being covered on the outer faces thereof with a second insulating material formed of a fluorocarbon resin having insulation layers having different melting points, the melting point of the outermost insulation layer of said second insulating material being made lower than the melting point of the inner insulation layer thereof, said coil wire being wound a predetermined number of turns so as to have a predetermined shape and heated to fuse said outermost insulation layer made of the fluorocarbon resin and to carry out bonding, wherein

before the outer circumferences of said stranded wires are provided with said second insulating material, said stranded wires themselves are heated to reduce volatile components included in said stranded wires themselves and then provided with said second insulating material, whereby when said heating coil is heated at the time of adhesion between said second insulating materials, the volatile components generated from the inside of said coil portion are prevented from accumulating between said stranded wire and said second insulating material and from deforming said heating coil.